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J. C. Adams, Esq., President, in the Chair.

Hugh Lee Pattinson, Esq., Newcastle-on-Tyne;
Rev. Thos. Wm. Webb, Granarew, near Monmouth;
Wm. Johnson, Esq., Thame;
Edward Hughes, Esq., Greenwich Hospital School;
George Henry Strutt, Esq., Melford House, Derby;
Colonel Lloyd, Surveyor-general of the Mauritius,
were balloted for and duly elected Fellows of the Society.

Solar Eclipse of July 28, 1851.

In the present *Monthly Notice*, the Editor has attempted to include the principal *astronomical* phenomena which were observed during the solar eclipse of July 28, 1851, and of which accounts were sent to the Society. It is the intention of the Council to publish these memoirs at length in the 4to. volume; but so much interest has been taken in certain peculiarities attending this eclipse, that an earlier, though very partial, publication, has been deemed expedient.

In the total eclipse of 1842, observed by many foreigners at different stations, and by MM. Baily and Airy in the north of Italy, certain rose-coloured mountains were observed upon the limb of the moon, which are well expressed by the plates illustrating the memoirs of those gentlemen (see *Mem. R. A. Soc.*, Vol. xv., pp. 1, 18, plates I. and II.) These prominences are sufficiently described by calling them conical, and, perhaps, on the whole, of greater height than breadth.

In the recent eclipse several of these conical prominences were seen; and many of the sketches made by the different observers may be sufficiently reproduced, with a little attention, from *description.*

Some observers denote a situation on the moon by the angle measured along the circumference of the moon, from the north point of the moon to the object round by the east. The reader, therefore, to comprehend the description, must draw a circle, graduate it to 360°, and then, at the angle mentioned, erect and colour the prominence according to the text. If the division 0° be at the top, the appearances will be as if seen by the naked eye, with the *west* or *preceding* on the right hand, and the *east* or *following* on the left. If this figure be turned upside down, the appearance will be that seen in an astronomical telescope. (See Mr. Dawes' sketch in the accompanying plate, which may serve as a type).

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* This is a re-issue of the Number, partially corrected.

1852MNRAS..12...41.

Again, if a point somewhere about 30° or 35° be taken to the east of the north, this will be tolerably near the *vertex* or upper limb of the sun. Some of the observers refer the places of the prominences by angles measured from the *vertex* to the east or west. If the vertex be placed below, the appearances are such as would be seen in an inverting telescope. In the annexed plate the appearances are figured in their natural position, as seen by the naked eye.

The eclipse commenced on the west or right side of the sun, and finished on the east or left. Generally, the disappearance took place in the east, and the reappearance on the west.*

The figure which represents the total eclipse, is taken from a sketch by Mr. Dawes, which included rather more than any other which has come into the Editor's hands. It is not to be considered as the state of the eclipse *at any one time*, but as containing all the appearances which were seen during the eclipse at any time, and at their respective *maxima*.

Mr. Hind's drawing is in all essentials precisely similar to Mr. Dawes', except that the southern *sierra* is continuous in Mr. Hind's, and interrupted in Mr. Dawes's sketch. Mr. Airy saw the western, but not the eastern portion of this sierra. It does not seem to have been distinctly recognised by any other observer.

The *conical* prominences, and even the prominences with two summits, may easily be drawn in their proper places by description, and by the figures in the *Memoirs* of MM. Baily and Airy, already referred to, or by Mr. Dawes' sketch; but the peculiar appearance of one prominence has been remarked by every observer, though there is a considerable difference in their descriptions and sketches. An attempt has been made to represent this appearance in the fifteen figures which are given in the bottom of the plate, and which are all intended by their authors to be portraits of the same individual. Conceiving these to be detached and applied to the limb of the moon at the angles assigned by the observers, it will not be difficult to create a tolerable picture of the eclipse as seen by each person.

In figuring the corona there is much greater discrepancy than in describing it: no attempt has been made to give any idea of this accompaniment beyond the words of the beholders. The description of the phenomena of Baily's beads must be looked for in Mr. Baily's paper, *Mem. R. Ast. Soc.*, vol. x., plate I.†

The physical and picturesque observations have been very briefly noticed, as they will appear in the quarto volume, and would have extended this *Notice* beyond due bounds. At the Island of Bue, the Norse fishermen showed great terror; at Trollhättan Falls, the observers within doors were almost scandalised by the uproar of

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* As the publication is intended for many persons who are *not familiar* with astronomy, this very rudimental information may have its use.

† Figures 1, 2, and 3 of this plate were seen by several observers on the present occasion, but not the distortion of the moon's limb, as in fig. 4. Refer also to Professor Moll's memoir and plate. *Mem. Ast. Soc.*, vol. i. p. 144, &c.

1852MNRAS..12...43.

those without; at Göttenburg, all sounds of labour ceased during the darkness; and not far from Christiania, an old woman, noticed by Lieut. Krag, merely lighted her candle and continued her work. At Lilla Edet, people seem to have put on their best clothes.

Among animals,—dogs, horses, and cows, seem to have felt a little surprise, but not so much as to divert their attention from food: a calf formed some exception to this rule. The wild birds, which were surprised by the sudden darkness, seemed utterly at a loss, and were distressed, while the domestic fowls treated it as they would have done a natural close of one day and the beginning of another. Flowers showed the night phenomena.

There are two remarks, in which *all* the observers agree; first, in the strangeness, grandeur, and impressiveness of the spectacle; all express their gratification with the sight, and think they were repaid for their trouble: secondly, all return thanks for the hearty and kind manner in which they have been received by Dane, Swede, and Norseman. Professor Hansteen and Mr. Crowe at Christiania, Mr. Mygind at Lilla Edet, Lieut. Pettersson at Göttenburg, and Colonel Silverstolpe at Christianstadt, are gratefully and particularly thanked for their assistance and countenance.

The angles are sometimes stated by the observers, sometimes guessed by the Editor from the sketches. Mr. Swan's, and probably Mr. Dawes' angles, may be considered as more accurate than the rest. The observations follow in geographical order, from which it was hoped that something might be elicited. The consideration of most importance seems to be the parts of the moon's limb at which the sun disappeared and reappeared.

Island of Bue.

Latitude, 61° 9′ 42″ N.; Longitude, $0^{h}\ 17^{m}\ 24^{s}$ E.

Observations by Professor P. Smyth.

These observations were made in company with Dr. Robinson and several other gentlemen. The Commissioners of Northern Lights allowed their steamer to make a *detour* from their periodical visitation of the Shetland lighthouses; and the officers of the ship, and the scientific gentlemen who embarked for the purpose of observing the eclipse, were fully equipped with telescopes, chronometers, &c. from the stores of the Admiralty and from the observatories of Armagh and Edinburgh.

The steam-boat reached her point of destination (the island of Bue, which is the outermost of the series which line the Norwegian coast, and about 60 miles north of Bergen) on the morning of the day of the eclipse. Sights for time were got by sextant and artificial horizon about 10 A.M., and about noon for latitude. As the rate and error of the chronometer had been obtained at the Edinburgh observatory, the longitude and latitude above given were deduced from the sextant observations.

The clouds which covered the sun more or less during the eclipse